

SEQUENCE LISTING

<110> KIM, Kye-Seong

<120> Novel miRNA molecules isolated from human embryonic stem cell

<130> OP04-1083

<160> 99

<170> KopatentIn 1.71

<210> 1

<211> 23

<212> RNA

<213> Homo sapiens

<400> 1

acuuuaacau ggaagugcuu ucu 23

<210> 2

<211> 23

<212> RNA

<213> Homo sapiens

<400> 2

uaagugcuuc cauguuuuag uag 23

<210> 3

<211> 22

<212> RNA

<213> Homo sapiens

<400> 3

uuuaacaugg gguuaccugc ug 22

<210> 4

<211> 23

<212> RNA

<213> Homo sapiens

<400> 4

uaagugcuuc cauguuucag ugg 23

<210> 5

<211> 22
<212> RNA
<213> Homo sapiens

<400> 5
uaaacgugga uguacuugcu uu 22

<210> 6
<211> 23
<212> RNA
<213> Homo sapiens

<400> 6
uaagugcuuc cauguugag ugu 23

<210> 7
<211> 22
<212> RNA
<213> Homo sapiens

<400> 7
aaaugcacuu uagcaauggu ga 22

<210> 8
<211> 23
<212> RNA
<213> Homo sapiens

<400> 8
uaauacugcc gguuaugau gga 23

<210> 9
<211> 22
<212> RNA
<213> Homo sapiens

<400> 9
acauagagga aaauccacgu uu 22

<210> 10
<211> 22
<212> RNA
<213> Homo sapiens

<400> 10

aaucauacac gguugaccua uu

22

<210> 11
<211> 21
<212> RNA
<213> Homo sapiens

<400> 11
aaauuacau gguugaucuu u

21

<210> 12
<211> 21
<212> RNA
<213> Homo sapiens

<400> 12
gccugcuggg guggaaccug g

21

<210> 13
<211> 21
<212> RNA
<213> Homo sapiens

<400> 13
gugccgccau cuuuugagug u

21

<210> 14
<211> 23
<212> RNA
<213> Homo sapiens

<400> 14
aaagugcugc gacauuugag cgu

23

<210> 15
<211> 22
<212> RNA
<213> Homo sapiens

<400> 15
acucaaaaug ggggcgcuuu cc

22

<210> 16
<211> 23

<212> RNA
<213> Homo sapiens

<400> 16
gaagugcuuc gauuuugggg ugu 23

<210> 17
<211> 22
<212> RNA
<213> Homo sapiens

<400> 17
uuauauaca accugauag ug 22

<210> 18
<211> 23
<212> RNA
<213> Homo sapiens

<400> 18
uaagugcuuc cauguuugg uga 23

<210> 19
<211> 23
<212> RNA
<213> Homo sapiens

<400> 19
cagugcaaua guauugucag agc 23

<210> 20
<211> 21
<212> RNA
<213> Homo sapiens

<400> 20
agggccccc cucauuccug u 21

<210> 21
<211> 22
<212> RNA
<213> Homo sapiens

<400> 21
ugagguagua gguuguauag uu 22

<210> 22
<211> 22
<212> RNA
<213> Homo sapiens

<400> 22
uagcagcacg uaaauauugg cg

22

<210> 23
<211> 24
<212> RNA
<213> Homo sapiens

<400> 23
caaagugcuu acagugcagg uagu

24

<210> 24
<211> 23
<212> RNA
<213> Homo sapiens

<400> 24
ugugcaaauc caugcaaaac uga

23

<210> 25
<211> 23
<212> RNA
<213> Homo sapiens

<400> 25
uagcuuauca gacugauguu gac

23

<210> 26
<211> 22
<212> RNA
<213> Homo sapiens

<400> 26
uucaaguaau ccaggauagg cu

22

<210> 27
<211> 22
<212> RNA

<213> Homo sapiens

<400> 27

cuagcaccuu cugaaaucgg uu

22

<210> 28

<211> 21

<212> RNA

<213> Homo sapiens

<400> 28

uagcaccuu ugaaucagu g

21

<210> 29

<211> 21

<212> RNA

<213> Homo sapiens

<400> 29

uauugcaccuu gucccggccu g

21

<210> 30

<211> 22

<212> RNA

<213> Homo sapiens

<400> 30

agcagcauug uacagggcua ug

22

<210> 31

<211> 22

<212> RNA

<213> Homo sapiens

<400> 31

uuaaggcacg cggugaugc ca

22

<210> 32

<211> 22

<212> RNA

<213> Homo sapiens

<400> 32

cagugcaaug uuaaaagggc au

22

<210> 33
<211> 22
<212> RNA
<213> Homo sapiens

<400> 33
ugugacuggu ugaccagagg gg 22

<210> 34
<211> 23
<212> RNA
<213> Homo sapiens

<400> 34
uauggcuuuu uauuccuag uga 23

<210> 35
<211> 23
<212> RNA
<213> Homo sapiens

<400> 35
acuccauuug uuuugaugau gga 23

<210> 36
<211> 24
<212> RNA
<213> Homo sapiens

<400> 36
agcuacauu ggcuacuggg ucuc 24

<210> 37
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-302b*

<400> 37
agaaagcact tccatgttaa agt 23

<210> 38
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-302b

<400> 38
ctactaaaac atggaagcac tta 23

<210> 39
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-302c*

<400> 39
cagcaggtac ccccatgtta aa 22

<210> 40
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-302c

<400> 40
ccactgaaac atggaagcac tta 23

<210> 41
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-302a*

<400> 41
aaagcaagta ctaccacgtt ta 22

<210> 42
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-302a

<400> 42
tcaccaaac atggaagcac tta 23

<210> 43
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-302d

<400> 43
acactcaaac atggaagcac tta 23

<210> 44
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-367

<400> 44
tcaccattgc taaagtgcaa tt 22

<210> 45
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-200c

<400> 45
tccatcatta cccggcagta tta

23

<210> 46
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-368

<400> 46
aaacgtggaa ttctctctat gt

22

<210> 47
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-154*

<400> 47
aataggtcaa ccgtgtatga tt

22

<210> 48
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-369

<400> 48
aaagatcaac catgtattat t

21

<210> 49
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-370

<400> 49
ccaggttcca ccccgagcagg c

21

<210> 50
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-301

<400> 50
gctttgacaa tactattgca ctg

23

<210> 51
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-371

<400> 51
acactcaaaa gatggcggca c

21

<210> 52
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-372

<400> 52
acgctcaaat gtcgcagcac ttt

23

<210> 53
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> probe for miR-373

<400> 53

acaccccaaa atcgaagcac ttc

23

<210> 54

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> probe for miR-373*

<400> 54

ggaaagcgcc cccattttga gt

22

<210> 55

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> probe for miR-296

<400> 55

acaggattga gggggggccc t

21

<210> 56

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> probe for miR-374

<400> 56

cacttatcag gttgtattat aa

22

<210> 57

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> probe for let-7a-1

<400> 57

aactatacaa cctactacct ca

22

<210> 58

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> probe for miR-16

<400> 58

cgccaatatt tacgtgctgc ta

22

<210> 59

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> probe for miR-17-5p

<400> 59

actacctgca ctgtaagcac ttg

24

<210> 60

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> probe for miR-i9b

<400> 60

tcagttttgc atggatttgc aca

23

<210> 61

<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-21

<400> 61
gtcaacatca gtctgataag cta

23

<210> 62
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-26a

<400> 62
agcctatcct ggattacttg aa

22

<210> 63
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-29

<400> 63
aaccgatttc agatggagct ag

22

<210> 64
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-29b-2

<400> 64
cactgatttc aaatggtgct a

21

<210> 65
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-92

<400> 65
caggccggga caagtgaat a

21

<210> 66
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-103

<400> 66
catagccctg tacaatgctg ct

22

<210> 67
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-124a #

<400> 67
tggcattcac cgcgtgcctt aa

22

<210> 68
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-130a #

<400> 68

atgccctttt aacattgcac tg

22

<210> 69
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-134 #

<400> 69
cccctctggt caaccagtca ca

22

<210> 70
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-135-2 #

<400> 70
tcacatagga ataaaaagcc ata

23

<210> 71
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-136 #

<400> 71
tccatcatca aaacaaatgg agt

23

<210> 72
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> probe for miR-222

<400> 72
gaagaccagat agccagatgt agct

24

<210> 73
<211> 23
<212> RNA
<213> Homo sapiens

<400> 73
uaagugcuuc cauguuunng unn

23

<210> 74
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer for miR-302b*~302b-302c*~302c-302a*~302a-302d-367 cluster

<400> 74
gggctccctt caactttaac

20

<210> 75
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer for miR-302b*~302b-302c*~302c-302a*~302a-302d-367 cluster

<400> 75
attctgtcat tggcttaaca atccatcacc

30

<210> 76
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer for miR-371~372-373*~373 cluster

<400> 76
cgatcgccgc ctgccgcat

20

<210> 77
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer for miR-371~372~373*~373 cluster

<400> 77
tggttcgtga tgccctactc aaacagggac

30

<210> 78
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer for miR-30a~30a* cluster

<400> 78
attgctgttt gaatgaggct tcagtacttt

30

<210> 79
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer for miR-30a~30a* cluster

<400> 79
ttcagctttg taaaaatgta tcaaagagat

30

<210> 80
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer for let-7a-1

<400> 80

gattcctttt caccattcac cctggatgtt

30

<210> 81

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> reverse primer for let-7a-1

<400> 81

tttctatcag accgcctgga tgcagacttt

30

<210> 82

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> forward primer for GAPDH

<400> 82

tgtcatcaat ggaaatccca tcacc

25

<210> 83

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> reverse primer for GAPDH

<400> 83

catgagtcct tccacgatac caaag

25

<210> 84

<211> 91

<212> RNA

<213> Artificial Sequence

<220>

<223> miRNA precursor for miR-302b* and miR-302b

<400> 84

guuggguggg cucccuucaa cuuuacaug gaagugcuuu cugugacuuu aaaaguaagu 60

gcuuccaugu uuuguagga gugaauccaa u 91

<210> 85

<211> 81

<212> RNA

<213> Artificial Sequence

<220>

<223> miRNA precursor for miR-302c* and miR-302c

<400> 85

gggaucuccu uugcuuuac auggggguac cugcugugug aaacaaaagu aagugcuucc 60

auguuucagu ggaggugucu c 81

<210> 86

<211> 69

<212> RNA

<213> Artificial Sequence

<220>

<223> miRNA precursor for miR-302a* and miR-302a

<400> 86

ccaccacuaa aacguggaug uacuugcuuu gaaacuaag aaguaagugc uucauguuu 60

uggugaugg 69

<210> 87

<211> 84

<212> RNA

<213> Artificial Sequence

<220>

<223> miRNA precursor for miR-302d

<400> 87
 aggggcccc ucuacuuuaa cauggaggca cuugcuguga caugacaaa auaagugcu 60
 ccauguuuga guguggugu uccu 84

<210> 88
 <211> 90
 <212> RNA
 <213> Artificial Sequence
 <220>
 <223> miRNA precursor for miR-367

<400> 88
 uggcuacagg ccuuacugu ugcuauaug caacucuguu gaauauaaau uggaauugca 60
 cuuuagcaau ggugauggau uguuaagcca 90

<210> 89
 <211> 84
 <212> RNA
 <213> Artificial Sequence
 <220>
 <223> miRNA precursor for miR-200c

<400> 89
 ggcgggggcc cugcucuac ccagcagugu uugggugcgg uugggagucu cuaauacugc 60
 cggguaauga uggaggcccc uguc 84

<210> 90
 <211> 86
 <212> RNA
 <213> Artificial Sequence
 <220>
 <223> miRNA precursor for miR-368

<400> 90
 uuugguauuu aaaaggugga uauucuuucu auguuuugu uauuuuggu uaaacauaga 60
 ggaaauucca cguuuucagu aucaaa 86

<210> 91
 <211> 75
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> miRNA precursor for miR-154*

<400> 91
 uacuugaaga uagguaucg uguugccuuc gcuuuuuug ugacgaauca uacacgguug 60
 accuauuuuu cagua 75

<210> 92
 <211> 69
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> miRNA precursor for miR-369

<400> 92
 uu gaagggag augaccgugu uauauucgu uuauugacuu cgaauaauc augguugauc 60
 uuuuucucag 69

<210> 93
 <211> 75
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> miRNA precursor for miR-370

<400> 93
 agacagagaa gccaggucac gucucugcag uuacacagcu cagagugcc ugcuggggug 60
 gaaccugguc ugucu 75

<210> 94
 <211> 84
 <212> RNA
 <213> Artificial Sequence

<220>

<223> miRNA precursor for miR-301

<400> 94

cugcuaacga augcucugac uuuaauugcac uacuguacuu uacagcuagc agugcaauag 60

uauugucaaa gcaucugaaa gcag 84

<210> 95

<211> 76

<212> RNA

<213> Artificial Sequence

<220>

<223> miRNA precursor for miR-371

<400> 95

agccuguggc acucuaacug ugggggcacu uucugcucuc uggugaaagu gccgccaucu 60

uuugaguguu accgcu 76

<210> 96

<211> 80

<212> RNA

<213> Artificial Sequence

<220>

<223> miRNA precursor for miR-372

<400> 96

ucaccugug ggccucuuuu guggagcacu auucugaugu ccaaguggaa agugcugcga 60

cauuugagcg ucaccgguga 80

<210> 97

<211> 75

<212> RNA

<213> Artificial Sequence

<220>

<223> miRNA precursor for miR-373* and miR-373

<400> 97

acuugggauac ucaaaauggg ggCgcuuucc uuuuugucug uacugggaag ugcuucgauu 60

uugggguguc ccugu 75

<210> 98

<211> 72

<212> RNA

<213> Artificial Sequence

<220>

<223> miRNA precursor for miR-296

<400> 98

cccuuccaga gggcccccc ucaauccugu ugugcuaau ucagaggguu ggguggaggc 60

ucuccugaag gg 72

<210> 99

<211> 72

<212> RNA

<213> Artificial Sequence

<220>

<223> miRNA precursor for miR-374

<400> 99

uacaucggcc auuauauac aacCugauaa guguuuagc acuuaucaga uuguauugua 60

auugucugug ua 72